3. The shaft of claim 1, wherein the diaphragm of the second flexible linkage has a thickness at the inner radial end that substantially equal to the thickness at the outer radial end.

4. The shaft of claim 1, wherein the diaphragm of the second flexible linkage extends radially outwardly in a direction that is substantially perpendicular to the second axial centerline.

5. The shaft of claim 1, wherein the engine shaft coupling includes a flange that extends radially from the aft end of the hub, which flange includes a plurality of circumferentially disposed fastener apertures.

6. The shaft of claim 1, wherein the hub further includes one or more radially extending knife edge seals disposed on an outer radial surface of the hub.

7. The shaft of claim 1, wherein the hub further includes a radially extending sealing protrusion adapted to engage a carbon seal.

8. The shaft of claim 7, wherein the hub further includes an annular lubrication well having a lip that extends radially inward from an inner surface of the hub, which well is disposed between the lip and the diaphragm of the second flexible linkage.

9. The shaft of claim 8, further comprising a plurality of circumferentially disposed lubrication passages extending through the hub in a region between the sealing protrusion and the lip.

10. A gas turbine engine, comprising:

a fan section;

an engine shaft; and

a flexible shaft for a gas turbine engine, wherein the flexible shaft includes:

a first shaft section, extending between a forward axial end and an aft axial end along a first axial centerline;

a second shaft section, extending between a forward axial end and an aft axial end along a second axial centerline;

a first flexible linkage including a bridge section connected between a first diaphragm and a second diaphragm, which first diaphragm is connected to the aft axial end of the first shaft section, and which second diaphragm is connected to the forward axial end of the second shaft section; and

a second flexible linkage including a diaphragm and a hub, which diaphragm cantilevers radially outwardly from an inner radial end to an outer radial end and is connected to the aft axial end of the second shaft section, and which hub is connected to the outer radial end of the second flexible linkage diaphragm, and includes an engine shaft coupling connected to the hub.

11. The engine of claim 10, wherein the diaphragm of the second flexible linkage radially tapers such that a thickness of the diaphragm at the inner radial end is greater than the thickness at the outer radial end.

12. The engine of claim 10, wherein the diaphragm of the second flexible linkage has a thickness at the inner radial end that substantially equal to the thickness at the outer radial end.

13. The engine of claim 10, wherein the diaphragm of the second flexible linkage extends radially outwardly in a direction that is substantially perpendicular to the second axial centerline.

14. The engine of claim 10, wherein the engine shaft coupling includes a flange that extends radially from the aft end of the hub, which flange includes a plurality of circumferentially disposed fastener apertures.

15. The engine of claim 10, wherein the hub further includes one or more radially extending knife edge seals disposed on an outer radial surface of the hub.

16. The engine of claim 10, wherein the hub further includes a radially extending sealing protrusion adapted to engage a carbon seal.

17. The engine of claim 16, wherein the hub further includes an annular lubrication well having a lip that extends radially inward from an inner surface of the hub, which well is disposed between the lip and the diaphragm of the second flexible linkage.

18. The engine of claim 17, further comprising a plurality of circumferentially disposed lubrication passages extending through the hub in a region between the sealing protrusion and the lip.

19. The engine of claim 10, wherein the engine shaft is operable to drive a compressor section of the engine.

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